

5.0 Discussion of Potential Effects and Proposed Mitigation Measures

This section discusses the proposed project impacts and recommended mitigation measures. For reference purposes only, the numbers correspond to the numbers in the CEQA Environmental Checklist Form. However, this discussion addresses issue of concern pursuant to both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Overall, the No-Build Alternative would have no potential impacts. The comments below are chiefly focused on the Mixed Flow Alternative and the HOV 2+ Alternative. The impacts of the latter two alternatives would be identical except where noted. For the purpose of this discussion, mitigation refers to a reduction of impacts that are already below the level of significance.

5.1 Aesthetics

The overall visual quality of the landscape along the Route 101 corridor in the proposed project area is moderately high. The route is not eligible as a state scenic highway, although the area is listed as a scenic resource in the Sonoma County General Plan.

The removal of mature redwood and other ornamental trees within the corridor undertaken to accommodate soundwall construction and roadway widening would cause negative visual impacts.

Soundwall Construction

Trees that must be removed for soundwall construction are those that are within 1 meter (approximately 3.3 feet) or less of a proposed sound wall. Soundwall construction would likely cause the removal of or damage to existing trees. In most cases, soundwalls will be built near the edge of the right of way, approximately .3 meters inside the existing chain-link fence. It is estimated that a total of approximately 80 to 90 redwood trees⁴ and another 50 to 60 trees of other species including non-ornamental volunteers will be removed for sound wall construction.

Construction of sound walls along the corridor would result in negative visual impacts. The walls would be visually encroaching elements in landscape and would obscure some vistas for motorists travelling on the highway. Light and glare reflection and sunlight reduction would further degrade the quality of views for residents along the corridor.

Roadway Widening

Highway widening at the median will result in negative but not significant visual impacts. The existing median in the proposed project area is composed of a grassy 12 m linear space that serves as a buffer between the northbound and southbound paved areas. Paving of this space would result in more 'hardscape' and change the visual character of the roadway from one of rural quality to one of urban character. Additionally, although no planting except grasses will be removed from the inside widening, the visual quality of the corridor will be degraded.

Outside shoulder widening will result in tree removals with extension of construction fill areas. It is estimated that approximately 100 to 110 redwood⁴ trees will be removed in conjunction with outside shoulder widening and road improvements at interchanges. Tree removals will result in negative but not significant visual impacts.

⁴ Please refer to footnote #2 in **Section 3.12** for the brief description of redwood tree counting methodologies.

Mitigation: - Aesthetics

- Special sound wall construction techniques will be employed that will avoid having to remove other nearby trees. This means that within the groups of redwoods (or other species), trees that are inside the required 1-meter clear zone will be removed while others within the same group, but beyond 1 meter from the new sound wall, will remain. The lower limbs of the remaining trees will be trimmed to a height approximately equal to the height of the new walls (3.6 to 4.2 meters) to allow construction access.

Reference to the space available for replacement planting reflects the fact that the State-owned right-of-way along the straightaway sections within the project area is extremely narrow in places. In several places, the stretches between interchanges lack sufficient area for highway plantings designed in accordance with Caltrans' safety and maintenance setback requirements.

- Setback requirements for new plantings call for trees to be no closer than 9 meters from the edge of the traveled way. The edge of the traveled way is usually indicated on the pavement surface with a solid white line along the right side of the right (outermost) lane and does not include the shoulder.
- In addition to limited space, other factors constrain the placement of trees within the highway right-of-way. A shallow drainage ditch runs most of the way along each side of the roadway to collect and remove storm water from the paved surface. The drainage ditch must be kept clear of trees and shrubs. A number of large, outdoor advertising signs (billboards) occur on private property at various places adjacent to the highway. In conjunction with permits issued by Caltrans relating to such signs, vegetation within the highway right-of-way is managed so as to provide approximately 150 meters of relatively clear sight distance that allows visibility of the sign by approaching motorists. Planting tall trees within these zones should be avoided where practical.
- In most cases, sound walls will be built near the edge of the right-of-way, approximately 0.3 meters (1 ft.) inside the existing chain-link fence.
- There will be a separate mitigation program for replacing oak trees affected by the project (See **Section 5.IV**)
- Vines, trees and shrubs will be planted for screening the soundwalls from highway views and to deter graffiti. Screening will reduce the visual impacts associated with the soundwalls.
- Soundwall construction method planning will consider the need for tree root system protection and sensitive pruning to save as many trees/shrubs as possible.
- To reduce the overall visual impact, mitigation will consist of planting upgrades to the interchanges within the proposed project area. Additional planting of trees, shrubs, and groundcover in the form of standard highway planting at the interchanges will visually strengthen and enhance the corridor, reducing visual impacts.

Mitigation:

- Redwood Tree Replacement

It is estimated that a total of approximately 200 redwood trees will be removed for soundwall construction and roadway widening. To meet the recommended mitigation measures contained in the 1997 Visual Assessment Report which call for redwood trees to be replaced at a 3:1 ratio, approximately 600 redwoods will be required. The size of the trees is 15-gallon size. Though the areas available for replanting are limited, it has been determined that redwoods can be distributed at certain points along the straightaway segments of the project. The remaining redwoods needed to achieve an overall replacement ratio of 3:1 will be distributed at the interchanges within the project area, and along other straightaway segments of Highway 101 to the south of but outside the immediate project area.

To confirm that the recommended mitigation measures appearing in the 1997 Visual Assessment Report can be fully implemented, further studies of the highway corridor were conducted in May of 1999. Locations within the project

area that are of sufficient size to accommodate desired replacement plantings were identified. An example of such an area is shown in **Exhibit 5-1.a**. The effectiveness of such replacement plantings in reducing the project's visual impact while traveling through the 8-kilometer project area was verified based on the distribution of replacement planting along the highway. Visual simulations depicting post-project conditions in several different views from the highway were prepared in support of the analysis (See **Exhibit 5-1.b through 5-1.i**.)

The proposed project would not result in additional lighting to the existing structure or add components that would create glare affecting vehicles.

5.II Agricultural Resources

The proposed project would not affect agricultural properties. There are no Prime Farmland soils near the proposed project and the current lands are zoned industrial.

5.III Air Quality

The air quality analysis done for this project utilizes a new protocol developed jointly by Caltrans and the University of California at Davis Institute of Transportation Studies and approved by the EPA for use in the Bay Area. The protocol is based on the fact that the Bay Area is in attainment for carbon monoxide and permits a qualitative approach to determine if a given project will have a detrimental impact on air quality.

FHWA determined that both the 1992-1997 Transportation Improvement Program and the corresponding 1995 Regional Transportation Plan (RTP) conform to the Transportation Conformity Rule as amended by the EPA in January 1998. The project is included in the 1998 conforming Regional Transportation Plan and Regional Transportation Improvement Program, and the design concept and scope proposed are essentially the same as the design scope and concept in the RTP and RTIP listings. All applicable Transportation Control Measures are included in this project.

Regulations

Caltrans addresses the impact of highway projects on air quality in accordance with the following air quality laws: The Clean Air Act and its Amendments, the EPA Final Regulations (August 1997), NEPA and CEQA. The San Francisco Bay Area Air Basin has been designated as a maintenance area for Carbon Monoxide (CO) and a non-attainment area for ozone. For PM₁₀, the area is undesignated for federal standards and non-attainment for state standards.

Ozone

On June 25, 1998, U.S. Environmental Protection Agency (EPA) the Regional Administrator signed a notice changing the Bay Area's classification for national 1-hour ozone standard from a "maintenance" area to an "unclassified nonattainment" area. The notice was published in the Federal Register on July 10, 1998, and became effective August 10, 1998.

The redesignation action is EPA's formal recognition that the region has recent violations of the national ambient air quality standard for ozone. The notice requires the Bay Area co-lead agencies to prepare a revision to the State Implementation Plan (SIP)—a compilation of plans and regulations that govern how the region complies with the federal Clean Air Act requirements. The 1999 SIP demonstrates how the region will re-establish an attainment record in the future.

The final Ozone Attainment Plan was adopted by the three co-lead agencies and submitted to the California Air Resources Board in June 1999. The California Air Resources Board (ARB) approved the plan in July of 1999 and sent it to EPA for consideration and eventual approval.

On October 12, 1999, EPA proposed to: 1) find the motor vehicle emissions budgets in the Bay Area's 1999 ozone attainment plan adequate for transportation conformity purposes, and 2) remove from the California State Implementation Plan (SIP) the old emissions budgets from the Bay Area's maintenance plan. EPA accepted public comment on the proposal until November 12, 1999. The adequacy review, which will determine whether the motor vehicle emissions budgets in the SIP are adequate for conformity purposes, is still ongoing.

Given the current conditions, the project meets the existing regional tests for conformity with the State Implementation Plan.

Carbon Monoxide (CO)

This air quality analysis utilizes the "Transportation Project-Level Carbon Monoxide Protocol", dated December 1997, prepared by the Institute of Transportation Studies, University of California at Davis. This protocol was approved by MTC in Resolution No. 3075 on June 24, 1998. Use of this protocol was recommended by the Bay Area Interagency Conformity Task force, which is the interagency consultation group established pursuant to EPA's conformity regulation and the Bay Area's conformity SIP.

Since the Bay Area was designated a maintenance area for CO on June 1, 1998, the protocol indicates that an analysis by comparison is appropriate for this project. This involves a comparison of the proposed facility with existing facilities within the Air District.

Comparisons of **mainline conditions** were made between the year 2000 Project Build (includes Mixed-Use and HOV 2+ Alternatives) conditions of Route 101 and the existing conditions on I-880 in Alameda County from Route 92 to Route 84; for **intersection comparisons**, Foothill/Mission Boulevard was used from the same area.

Table 5-III
Comparison of Air Quality Mainline Conditions

	<u>Parameters</u>	<u>Route 101 (year 2000 Build)</u>	<u>Route I-880 (Existing)</u>
A	Receptor Distance	11 m (36')	7.62 m (25')
B	Roadway Geometry	6 lanes	8 lanes
C	Worse case Meteorology	Coastal Valley	Coastal Valley
D	Peak Hourly Volumes	10,216 vehicles per hour	15,000 vehicles per hour
E	Hot/Cold Starts	50/10 WB 50/10 EB	50/10 NB 50/10 SB
F	Percent HDG trucks	0.9-2.1%	7.6-8.3%
G	Background CO	3.2 parts per million	3.2 parts per million

Forecast projections for future years of 2005 and 2015 indicate that traffic impacts at nearby intersections will be minimal. Most intersections will experience a less than 10 percent difference in future predicted traffic volumes between the project's Mixed Flow Alternative/HOV 2+ Alternative and the No Build Alternative. This is not significant given the accuracy of the prediction methodology.

Results of Comparison -This project will result in a facility which is less congested with lower traffic volumes, fewer lanes in comparison to comparable facilities within the same Air District (I-880 and Foothill and Mission). Since the comparable facilities are in an area that meets air quality standards (maintenance area), this project will also meet microscale air quality requirements and will therefore have no significant impact on air quality or cause exceedances of state or federal CO standards.

Particulates (PM₁₀ and PM_{2.5})

This basin has been designated as a non-attainment area for PM₁₀ (state standard) and undesignated for the Federal Standard. At this time there is no requirement to quantify PM₁₀ or PM_{2.5} impacts nor are there appropriate tools available for analyzing microscale impacts of these particulates.

Construction Impacts

The proposed project will generate air pollutants during construction. Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most pollution will consist of windblown dust generated by excavation, grading, hauling and various to other activities. The impacts from the above activities would vary from day to day as construction progresses.

Mitigation: The Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust through the application of water or dust palliatives.

5.IV Biological Resources

Caltrans Biologists contacted both the California Department of Fish and Game (CDFG) and the National Marine Fisheries Services (NMFS) regarding the potential impacts of the project on sensitive species. Project coordination was also done with the U.S. Fish and Wildlife Service.

Feedback from staff at all three agencies indicated that due to the close proximity of the roadway to the project area, there are no sensitive species or critical habitat in the disturbed/developed area adjacent to this portion of Route 101. Caltrans field studies and available sources (California Natural Diversity Database) also indicated the absence of sensitive or endangered species in the Santa Rosa Quad. It is unlikely that the project will have any adverse impacts on sensitive species or their habitat.

Federal and State Agency staff indicated that there is a known steelhead run (*Oncorhynchus mykiss*) in Laguna De Santa Rosa Creek. Steelhead is a federally threatened species. The Federal agency with jurisdiction has concurred through informal consultation that there will be no effect on steelhead. Appropriate mitigations were identified and are listed below.

The CDFG indicates that the northwestern pond turtle (*Clemmys marmorata marmorata*) may be in Laguna De Santa Rosa Creek. This turtle is a federal species of concern. It inhabits permanent streams and ditches in the North Coast Ranges north of the San Francisco Bay. Appropriate mitigations were identified and are listed below.

Mitigation:

- All work to be done within Laguna De Santa Rosa Creek would occur during the construction window as required by the Fish and Game permit.
- To insure project impacts avoidance, resource agencies require a Caltrans fisheries biologist to inspect the site prior to dewatering activities and construction.

Tree Impacts

The proposed project will have impacts on mature trees including California native oaks (*Quercus lobata* and *Quercus agrifolia*), landscape redwoods, and other trees (i.e., Pine, Eucalyptus, Willow, Cottonwood, White birch, Box Alder) scattered within the Caltrans Right of Way.

Valley oaks (*Quercus lobata*) do not have state or federal status, but their distribution is becoming limited due to agriculture and urbanization (CNPS List 4). Due to the important natural habitat value of oaks, it is Caltrans' practice to replace oak impacts. This proposed project impacts 87 oaks with stem diameters greater than 25 mm. See **Section 5.I** (Aesthetics) for a discussion of redwood tree impacts.

Table 5-IV.b(i) presents the number and approximate size of oak trees potentially impacted by the proposed Sonoma 101 project.

Table 5-IV.b(i)
Oak Trees Subject to Project Impacts

SPECIES	DBH m				TOTAL
	.025 - .1	.1 - .25	.25 - .37	.37 - .5	
Valley Oak (<i>Quercus lobata</i>)	40	17	-	3	60
Coast live oak (<i>Quercus agrifolia</i>)	12	11	-	1	24
Clusters of coast live oaks (2-4)	-	-	3	-	3
Total Oak Trees					87

Mitigation:

General Tree Mitigation

- Vehicle and foot traffic will be restricted near trees to be saved. Contractors will try to perform major construction during summer when the soil is dry and less likely to be compacted.
- No asphalt, gravel, fill soil, machinery or other material will be stored near the trees to be preserved.
- If pruning is required due to construction related activities, it must be carried out under the supervision of a qualified arborist. If these activities jeopardize the survival of the trees, then they must be counted as loss and mitigated for.
- Ditch relocation and trenching near the root zone will be avoided.
- Pile type foundations are proposed in construction of soundwalls in areas where there are trees.
- Where the existing trees to be preserved impose an equipment access problem, they will be fenced off to prevent damage.
- After construction is completed, lost oak trees will be replaced in accordance with the Oak Tree Replacement plans (see below). See **Section 5.I** for a discussion of Redwood Tree Replacement plans. Landscape mature trees will be replaced with drought tolerant native shrubs that persist under existing conditions and require minimum maintenance. Shrub species will also be planted along the reconstructed ditch bank where there is adequate space. A high planting density will be employed to compete against invasive weeds and to stabilize the reconstructed ditch banks. Nursery grown cuttings and seedlings developed from local genetic stocks would be used for speedy plant establishment. Transplanting activities will be carried out during winter months to insure transplants can benefit from winter rainfall. A contractor familiar with plant propagation and habitat establishment will carry out transplanting.

Mitigation:

Oak Tree Replacement-

- Although the proposed project was designed to minimize the loss of oak trees, 87 oak trees are estimated to be removed. Approximately 1.74 acres of land would be needed for oak replacement at a minimum ratio of 3:1 and at a rate of 150 trees to 1 acre of mature oak habitat. The mitigation site has been identified (See **Exhibit 5-IV.b(i) & 5-IV.b(ii)**) near the Mendocino off-ramp on northbound 101. This site has limited development value and merges with an existing mature stand of oak trees on the north side and a previous oak tree mitigation site on the south side.
- For oak replacement, acorns will be collected from local ecotypes for both direct field planting and nursery grown seedlings. Seedlings should be planted during the rainy season (December to February) when the soil is moist. Watering right after transplantation is essential, this will ensure adequate moisture and air pockets substitution. If water is accessible, deep irrigation during summer can also reduce the possible drought damage. Irrigation shall cease after the second year unless limited to replants.
- If protective wire cages are used, they shall be monitored and removed to prevent growth obstruction. Other cultivation and maintenance activities including mulching and weeding would be carried out as needed. Weeding or hoeing around the trees would be performed from both inside the screens and to a radius of one meter from any protector.

Wetland Areas

The jurisdictional/wetland areas include separate but similar culverts and drainage ditches, disturbed by road construction and off-road human activities. The impacted wetland resources fall under ACOE jurisdiction and may be subject to environmental regulations applied to wetland preservation.

Both Laguna De Santa Rosa and Colgon Creek are concrete lined at the project site and are 12 m and 7.5 m wide at the Ordinary High Water Mark (OHWM), respectively. All of the area of Laguna De Santa Rosa Creek and Colgon

Creek (OHWM to OHWM) in the project area, approximately .05ha (.12 acres) and .002 ha (.005 acres) respectively, will be impacted during construction. (See **Exhibit 5-VI.c(i)**).

Approximately .15 ha (.37 acre) wetland resources will be filled by road widening and extending existing culverts. The culvert additions will include portions of a linear drainage strip paralleling the roadway. On the west side of Highway 101 at K.P. 28.32 (P.M. 17.6), there is a culvert that may be considered jurisdictional as waters of the US by ACOE. The area between the existing culvert and Caltrans right-of-way (that had been excavated to improve flows) will be culverted. The approximate area of impacts is .0015 ha (.004 acres)

See **Table 5-IV.c(i)** for a summary of waters impacts.

Table 5-IV.c(i)
Summary of Impacts to Waters of the U.S. within Project Limits

Waters of the US	Permanent Impacts	Temporary Impacts
Laguna De Santa Rosa/Waters	.019 hectares (.047 acres)	.03 hectares (.08 acres)
Colgan Creek/Waters	No permanent impact due to an increase in the height of the existing headwall.	.002 hectares (.005 acres)
Drainage ditch at K.P. 28.32 (P. M. 17.6)/Waters	.002 hectares (.004 acres)	N/A
Wetlands	.15 hectares (.37 acres)	N/A
TOTAL IMPACTS	.17 hectares (.42 acres)	.032 hectares (.08 acres)

Mitigation:

Wetlands Impacts

- Creek flows cannot be impeded. The use of water diversion will be needed to insure aquatic habitat protection downstream from the project area. Sandbag barriers will be placed around the construction area within the channel upstream. See **Exhibit 5-IV.c(i)**. The result should be clean water in and clean water out. Once construction is finished, all project-introduced material (false work, demolition debris, etc.) must be removed, leaving the creek as it was before construction. Periodic checks by a Caltrans Natural Sciences Unit biologist will be made without notice.
- To mitigate wetland impacts that cannot be avoided or further minimized, widening or reconstruction of the drainage ditches will create new wetland areas. A minimum ratio of 1:1 (.15 ha/.37 acre) is required in order to conform to the ACOE no-net-loss wetland policies. For this purpose, upland areas along drainages at Todd Road within the Caltrans R/W will be graded down to the elevation that will allow soil inundation during the peak of the rainy season. In addition, drainages along Sonoma 101 will be reconstructed as close as possible to the filled site.
- It is expected that some of the wetland species existing in the area will naturally encroach on the excavated area (i.e., *Typha sp.*, *Juncus sp.*). If revegetation is needed, seeds will be collected from the local plants and used for revegetation. If necessary, commercially available plug or nursery stock will be used to supplement locally collected specimens. Additional mitigation includes removal of all petroleum products, spoil materials, debris, and exotic broadleaf species after construction is completed. Contractors will carry out excavation and construction during summer months, when the drainage channel is dry to reduce excessive siltation of the downstream wetland areas. The wetland areas outside of the construction zone must be fenced off and designated as an environmentally sensitive area (ESA).
- Reconstructed drainage banks are prone to erosion. Bare ground and disturbed areas will be vegetated with compatible plant species through hydroseeding to reduce soil erosion. Native plant species should be included in the erosion control seed mix. If necessary, other erosion control measures including blankets, matting, and mulching will be used for soil stabilization. Erosion control plans shall meet with approval of the Caltrans landscape architect.

See **Section 3.7.1:Wetland Only Practicable Alternative Finding**

The California Department of Fish and Game (CDFG) and the National Marine Fisheries Services (NMFS) have indicated that there is a known steelhead run (*Oncorhynchus mykiss*) in Laguna De Santa Rosa Creek. Steelhead is a federally threatened species. Appropriate mitigations were identified and are listed in **Section 5.IV**.

The CDFG indicates that the northwestern pond turtle (*Clemmys marmorata marmorata*) may be in Laguna De Santa Rosa Creek. This turtle is a federal species of concern. It inhabits permanent streams and ditches in the North Coast Ranges north of the San Francisco Bay. Appropriate mitigations were identified and are listed in **Section 5.IV**.

Based on the available sources (California National Diversity Database) and field surveys, no suitable habitat occurs for other sensitive species listed within the Santa Rosa Quad.

Permits

- Under jurisdiction of the U. S. Army Corps of Engineers (ACOE), a section 404 permit will be required for any fill which takes place in wetland areas. Under section 404 of the Clean Water Act, stacked Nationwide Permits #14 and #33 from ACOE will be required. The permanent impacts meet the criteria of Nationwide Permit #14 in that the fill placed in the wetland is approximately 1/3 acre and the road crossing is culverted to prevent restriction of high flows and can withstand high flows. The temporary construction impacts, access, and dewatering meet the criteria of Nationwide Permit #33.
- A California Department of Fish and Game 1601 Streambed Alteration Agreement for any work occurring in the creeks will be required.
- A section 401 Water Quality Certificate will be obtained from the San Francisco Bay Regional Water Quality Control Board to ensure that water quality standards will not be violated.

Activities necessary to construct the proposed project, when undertaken in concert with the mitigation activities identified within this environmental document (see **Section 10**) conform to the spirit of the Resource Conservation Element of the Sonoma County General Plan and the Open Space and Conservation Element of the Santa Rosa General Plan. All unavoidable impacts are less than significant.

5.V Cultural Resources

The proposed project would not affect any properties on or eligible for the National Register of Historic Places and a literature search and field surveys did not result in identifying any historic or archaeological resources within the APE. See **Section 11** for the final disposition of Section 106 issues.

5.VI Geology and Soils

The proposed project is situated primarily in the Santa Rosa Valley and extends southward into the Cotati Valley. Both the Santa Rosa Valley and the smaller Cotati Valley are parts of a linear northwest trending bedrock depression within the Coast Ranges of Central California. The depression parallels regional geological structures and was formed by downwarping and movement along the major faults in the region and is now filled with alluvium to considerable depth.

Soils

The geological section in central Santa Rosa Valley is comprised of up to 100 feet of Quaternary alluvium consisting of interbedded gravelly sand and clay. The upper 25 feet of sediment consists predominantly of sandy to silty clay.

Seismicity

This proposed project is located in close proximity to several active faults. The Healdsburg-Rodgers Creek Fault is located 2.1 km east of the north end of the proposed project and is considered to be an active fault. A splay of this fault, which is mapped as concealed, crosses the proposed project approximately 305 m south of the Route 12/101 intersection. Another concealed fault splay is mapped as crossing the alignment near Bellevue Avenue. There are no

proposed structures at the locations of the fault splays within the project limits. See **Table 5-VI.c** for a summary of other well identified, active faults located in the region:

Table 5-VI.c
Earthquake Fault Summary

Fault	Distance to Project	Maximum Credible Event	Maximum Peak Bedrock Acceleration
San Andreas	29 km	8.0	0.33g
Hayward	52 km	7.5	0.13 g
Healdsburg-Rodgers Creek	2.1 km	7.0	0.60g
Maacama	17 km	7.25	0.29 g

The Healdsburg-Rodgers Creek Fault and the concealed fault splays pose the greatest seismic hazard to the proposed project due to their location and potential magnitude. The California Division of Mines and Geology has not designated the splays as Holocene active. There is a chance of surface rupture; but, since the highway at the fault crossing is at grade, the effects of surface rupture on the highway would be relatively minor and quickly and easily repaired. The surface rupture could also damage the proposed sound walls. Using pile foundations and more frequent wall joints within the potential rupture zone will minimize damage and should prevent toppling.

Additionally, all bridges in the proposed project area have been retrofitted to withstand the maximum credible earthquake magnitudes.

5.VII Hazards and Hazardous Materials

There is potential soil and groundwater contamination due to underground storage tank leaks, hazardous waste material releases adjacent to the state highway and aerial deposition of lead from motor vehicle exhaust. The contaminated sites are adjacent to the highway and may impact the project during construction stage.

Soil and groundwater investigations were performed to further evaluate soil and groundwater conditions within the project boundaries. The investigations included the collection of soil and groundwater samples for the analysis of petroleum hydrocarbons and volatile and semi-volatile organic compounds and heavy metals. The site investigations focused on the following areas:

- Potential aerially deposited lead near-surface soil impacts on Route 101 and Route 12 in the unpaved shoulder and median from leaded gasoline emissions.
- Potential soil and groundwater contamination impacts associated with fifteen adjacent facilities with documented petroleum hydrocarbon groundwater plumes. The facilities include:

Todd Construction	West Cal Tractor	Conway Western Express	Santa Rosa U-Hall Center
Bepex Corporation	Prestige Lincoln-Mercury	Corby Shell, Arco #1318	Chevron #9-1168
Santa Rosa Nissan	Santa Rosa Dodge	Tower Mart	Jean's Shell
Harrison's	Marine Center	Hearn Avenue Arco.	

No groundwater contamination was encountered at the above sites but there was contamination, of the soil, on unpaved shoulders due to aerially deposited lead. Additionally, soundwall installations requiring groundwater dewatering in the general vicinity of the Route 101 corridor were evaluated for the potential presence of impacted groundwater.

Mitigation:

- Widening of the Route 101 shoulders, soundwall installations and intersection modifications will require the management, treatment, and disposal of impacted soil and groundwater in accordance with State and Federal laws.
- Contamination of unpaved shoulders within the project area due to aerially deposited lead from vehicle emissions requires special handling (including reuse of the material) in accordance with the Department of Toxic Substances Control (DTSC) Lead Contaminated Soils Variance dated June 7, 1995. A site investigation was completed on August 19, 1999 to determine if the concentrations of lead in the unpaved shoulder areas and medians of the project area meet the criteria of the DTSC variance. Along Route 12, 43 borings were drilled and sampled. 140 borings were drilled and sampled along Route 101. No groundwater was encountered.
- ✓ With respect to the DTSC variance, soils from the existing unpaved shoulders and medians along Routes 12 and 101 meet extractable and total lead levels such that they can be re-used but will likely have to be placed a minimum of five feet above the water table and covered with at least 2 feet of clean soil.
- Special provisions covering the implementation of a health and safety plan, the handling, and disposal of the contaminated material will be included in the construction contract.
- The reuse of aerially deposited lead contaminated soil detailed in embankment #1 and embankment #2 will also be addressed in the SWPPP. The North Coast RWQCB will be notified 30 days prior to advertisement of bids.
- ✓ Embankment Site No 1 is located on southbound Route 101 between the freeway and southbound Santa Rosa Ave on-ramp. Approximately 22,300 m³ of lead contaminated material will be placed at this site, capped with 0.6 m (3200 m³) of clean fill from Site No 2.
- ✓ Embankment and Borrow Site No. 2 is located at the northwest corner of Farmer's Lane and Hoen Road at the Route 12/ Farmers Lane Interchange. Approximately 36,000 m³ of leaded material from the Route 101 widening project will be stored at this location and 11,100 m³ of this clean material will be removed as fill for the widening project. The site will be contour graded and covered with .6 m (7000 m³) of clean fill from the site.

The results of a Sanborn map review, site reconnaissance and regulatory file reviews did not indicate the presence of Underground Storage Tanks(UST's) within the existing or proposed Caltrans ROW. However, undocumented UST's associated with former facility operation may exist.

Mitigation: If encountered, UST's and associated piping will be removed in accordance with the requirements of the Sonoma County Environmental Health Department (SCEHD).

The project is not located near or within 2 miles of a school and will not emit hazardous emissions or result in a safety hazard for a school or an airstrip.

The proposed project is expected to provide a beneficial effect by increasing Route 101 safety operations, thus decreasing hazardous cargo spill risk within the proposed project limits.

5.VIII Hydrology and Water Quality

Construction period erosion impacts will be avoided by preparing and implementing an erosion-control plan as a component of the Storm Water Prevention Pollution Plan (SWPPP), which is a Caltrans RWQCB permit requirement.

There is potential soil and groundwater contamination due to underground storage tank leaks. Hazardous waste material releases adjacent to the state highway and aerial deposition of lead from motor vehicle exhaust. The contaminated sites are adjacent to the highway and may impact the project during construction stage. See **5.VII** above.

The area surrounding the proposed projects consists of introduced non-native urban landscaping. The only discharges in the immediate vicinity are storm water runoff from Route 101.

Surface Water

The widening of the mainline, structures and approaches would cause a slight increase in the amount of runoff from the additional surface. This additional runoff would be negligible and would not substantially change the amount of surface water.

Roadways can accumulate pollutants such as oil, grease and heavy metals such as copper and zinc. The amounts of these pollutants accumulating on the road surface are generally correlated with the daily traffic volumes. As is typical of storm water runoff from highways, runoff or any proposed discharge to surface water from highway 101 would be expected to include these substances.

Other possible temporary impacts from the proposed project construction include increased erosion during the construction phase, and the potential for spills and leaks of lubricants, fuels, or other fluids associated with vehicles and equipment. The proposed project would not result in a permanent increase in soil erosion or siltation.

Mitigation: NPDES permitting program

- Discharges to waters of the U.S. are regulated under the NPDES permitting program. Construction sites that will disturb 2 or more hectares of soil or that are within a water sensitive area must adhere to the conditions of the statewide Caltrans NPDES Permit CAS #000003, Order #99-06-DWQ, issued by the State Water Resources Control Board (SWRCB). Adherence to the compliance requirements of the NPDES General Permit CAS #000002, Order #99-08-DWQ, for General Construction Activities is also required.
- Standard Special provision 7-345 will be included in the PS & E to address water pollution control and Storm Water Pollution Prevention (SWPPP) requirements. The contractor will prepare and will implement best management practices during the construction period.
- The reuse of aurally deposited soil detailed in embankment #1 and embankment #2 will also be addressed in the SWPPP. The North Coast RWQCB will be notified 30 days prior to advertisement of bids.
- Development and proper implementation of the SWPPP, as required under the Caltrans District 4 NPDES permit, will contain erosion-control measures following Caltrans Standard Specifications. The measures will minimize potential for construction-related impacts. Both temporary and permanent erosion control will be incorporated into the project.
- A section 401 Water Quality Certificate would be required from the San Francisco Bay Regional Water Quality Control Board to ensure that water quality standards will not be violated.

Groundwater

The proposed project would not involve substantial excavation affecting groundwater resources. There would be no impact to any known drinking water supplies. The proposed project would not involve the use of groundwater and would not result in any depletion of groundwater resources. The project would not reduce the amount of groundwater otherwise available for public water supplies.

The project would not expose people or structures to a significant risk or injury or death involving flooding, seiche, tsunami, or mudflow.

Fueling or maintenance of construction vehicles would likely occur in the proposed project area, presenting risk of an accidental release of potentially hazardous materials. A spill of these materials may pose a threat to water quality in Sonoma Creek if spilled materials enter the waterway or surrounding wetlands.

Mitigation: Proper control and containment of on-site hazardous materials will be covered by management practices in the SWPPP. Such management practices will include secondary containment surrounding any fueling facilities and operations at the proposed project site or conducting equipment fueling and maintenance away from the proposed project location.

According to the Federal Flood Insurance Rate Maps 060375-0725B, 060375-0855B, 060380-0001B, this proposed project is outside of the 100-year flood zone.

5.IX Land Use and Planning

The proposed project proposes widen and construct soundwalls on an exiting facility and as such would not physically divide an established community. Work for the project occurs mostly in the State right-of-way.

It does not conflict with any local land use or transportation planning policies of Sonoma County nor does it conflict with any habitat conservation plans including the Resource Conservation Element of the Sonoma County General Plan or the Open Space and Conservation Element of the Santa Rosa General Plan.

5.X Mineral Resources

The project would not result in the loss of availability of a known mineral resource of value to residents of the state or result in the loss of availability of a locally important mineral resource recovery site. Recycling of existing shoulder material as aggregate subbase may be implemented pending concurrence of Caltrans' Materials Engineering Section. The Sonoma County Water Agency has reclaimed water at the Wilfred Avenue Interchange that may be used for construction.

5.XI Noise

Noise abatement is considered only where frequent human use occurs and lowered noise levels would be beneficial. The primary consideration in traffic noise abatement is given to exterior activities. The FHWA's and Caltrans' exterior noise abatement criteria level for activities in residences, hotels, motels, schools, parks, and hospitals area is 67 dBA leq(h). This means that if the exterior noise is expected to "approach or exceed 67 dBA" in the future under worst case traffic noise conditions, Caltrans is obligated to consider noise abatement measures, whether or not all of the noise produced is as a direct result of the proposed project. The exterior criteria level for office and industrial buildings, shopping centers, and other commercial businesses is 72 dBA. On the following page, **Table 5-XI**, the Noise Summary Table, gives specific information on existing noise levels in the project area as well as identifying what incremental noise impacts the proposed project will make to existing noise levels. Please note that the following table is based upon predictions made by a computer model.

Table 5-XI
Noise Summary Table

Receptor Number	Location	Existing Peak Noise (dBA)	Future Build Worst-Case Noise Levels	
			Without Barrier (dBA)	With Barrier (Height/dBA)
R-1	Sonoma Community Park	64(M)	65	4.2m/---
R-2	88 Scenic Ave.	75(E)	74	4.2m/67
R-3	3521 Santa Rosa Ave. #2	--	73	4.2m/65
R-4	3455 Santa Rosa Ave. #79	76(M)	74	4.2m/62
R-5	3309 Santa Rosa Ave. #64	74(E)	74	4.2m/64
R-6	Lucas Park #32	73(E)	73	4.2m/66
R-7	2963 Santa Rosa Ave. A16	73(E)	73	4.2m/67
R-8	2389 Santa Rosa Ave. (pool)	73(E)	73	4.2m/64
R-9	1885 Santa Rosa Ave. #2	77(M)	76	4.2m/64
R-10	1015 South A St.	73(E)	72	4.2m/64
R-11	403-405 Earle St.	--	65	No Wall
R-12	568-590 Olive St.	--	63	No Wall
R-13	230 Barnett	64(M)	--	3.6m/66
R-14	905 S. Davis	--	72	3.6m/67
R-14A	Davis Street Park	--	73	3.6m/67
R-15	1015 B South Davis Street	66(M)	--	3.6m/67
R-16	1330 Poplar	--	74	4.2m/69
R-17	1424 Poplar	80(M)	79	4.2m/67
R-18	2108 Corby	--	72	4.2m/67
R-19	2358 Corby Apt. #3	--	71	4.2m/68
R-20	84 Bellevue	76(M)	75	4.2m/68
R-21	3272 Newmark Dr.	--	--	3.6m/66
R-22	3300 Moorland	--	--	3.6m/67
R-23	110 W. Robles	73(M)	75	4.2m/67
R-24	3586 Moorland	71(E)	73	4.2m/65
R-25	109 Todd Road	69(E)	70	4.2m/64
R-26	102 Scenic Ave	73(M)	72	3.6m/67
R-27	Redwood Drive (Taco Bell)	--	65	No Wall

(M)=Measured noise level.

(E)=Estimated noise level.

As shown above, the future worst-case traffic noise levels were predicted to be in the range from 63 to 79 dBA leq(h) within the project limits. These predictions were generated by the future freeway traffic during the noisiest hour of the day (at level of service "C"). For the purpose of this noise report, 1800 vehicle per lane per hour traveling at 105 km per hour for mainline and 1000 vehicles per lane per hour traveling at 105 km per hour for the auxiliary lane are assumed to be the level of service "C".

Note that at many locations, existing noise levels exceed the noise abatement criteria even without the proposed project. Such existing locations require consideration of abatement.

At some locations, the model has predicted noise levels to drop by 1 dBA, even without the barrier. It is assumed that this change, in noise level, is due to proposed changes to the facility rather than a deviation between the computer model and actual noise measurements. However, in either case, this change in noise level is insignificant and is not detectable to the human ear.

Although the traffic noise analysis for this project identified 14 potential soundwall locations, 13 are proposed to be installed. See **Exhibit 2-6.1 Mixed Flow Alternatives with Soundwall locations**. Due to proposed commercial redevelopment considerations, soundwall number #2 has been dropped from the project. An Open House Public Information Soundwall Meeting was held on April 14, 1999 in Santa Rosa to give the affected property owners the opportunity to express their views and discuss the soundwall proposals. With few exceptions, the affected property owners were largely in favor of the proposed soundwalls. Consideration for noise abatement is required according to Title 23, United States Code of Federal Regulations Part 772 and Caltrans' Highway Design Manual, Chapter 1100. Providing noise barriers, such as soundwalls or earthberms that will effectively intercept the acoustic line of sight between the noise source and the receptor, can mitigate excessive noise levels. The effectiveness of a noise barrier largely depends on its height, its length, and its location. Due to limited space available, earthberms are not feasible for this project.

5.XII Population and Housing

The proposed project would result in a Route 101 roadway capacity increase, but would have a negligible effect on the North Bay region population growth and development patterns. Land use patterns are determined by local jurisdictions.

Socioeconomics/Growth Issues

ABAG, the Association of Bay Area Governments, states that the North Bay counties of Sonoma, Solano, and Napa, as well as the East Bay county of Contra Costa, are predicted to face the highest percentage growth in population and jobs between 1995 and 2020.

By the year 2020, Santa Rosa alone will have the fourth highest population of any city within the nine-county Bay Area region. Among mid-sized cities in the region (with populations between 100,000 and 300,000), Santa Rosa will lead the region in job growth, adding 51,530 more jobs by 2020, mirroring an almost 50% increase for jobs in Sonoma County as a whole.

With increases in both jobs and population, Sonoma County will also experience a significant increase in the proportion of work trips staying within the county and an increase in the number of trips out of the county. Per the Sonoma/Marin Multi-Modal Transportation and Land Use Study, trips produced in Sonoma County and going into Marin County are forecast to total more than 25,000 during the commute hours by 2015. In addition, "through trips" not beginning in Sonoma County but passing through on Highway 101, combined with work trips generated in Sonoma County with destinations in other counties within the region, may substantially impact the level and duration of traffic flows on Highway 101 already operating at LOS E and F during periods of peak congestion.

With the substantial projected growth rate for this region, it is unlikely that the HOV lane on Highway 101 could significantly induce growth beyond current regional growth trends.

5.XIII Public Services

The proposed project would not affect any public services. Emergency vehicles response time should improve with the increased capacity and improved traffic flow.

The proposed project site is adjacent to land owned and/or operated by public agencies but use will only be temporary in nature. See **Section 9: Section 4(f) Temporary Use Agreement**. Section 4(f) of the Department of Transportation Act (49 USC, Section 303 and 23 USC 138) addresses impacts of transportation projects to public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

The soundwall to be constructed will not be on the right of way line but the contractor may need to access through the park from Davis Street to grade the area within state right of way and remove the existing state fence after construction of the soundwall and landscaping activities.

5.XIV Recreation

The project would not increase the use of parks of any kind such that a substantial physical deterioration of the facility would occur nor does the project include recreational facilities or require the construction of such.

5.XV Transportation/Traffic

Traffic on this portion of Route 101 during commute times is already beyond the capacity initially envisioned. The expansion of the highway from 4 to 6 lanes will help alleviate some of this congestion. The proposed project addresses plans approved by MTC, Sonoma County Transportation Authority, and the City of Santa Rosa.

Two simulations (FREFLO and FREQ 11) were conducted to analyze future traffic on Route 101. Traffic study results, included in Section 2.6 of this document, predict reduced freeway delay and improved travel times due to the build alternatives. For each alternative, the FREFLO study analyzed year 2015 and 2020 traffic in the northbound and southbound directions for both AM and PM peak hour periods. As a result, eight scenarios are available to compare the alternatives. The eight scenarios being 2015/northbound/AM, 2015/southbound/AM, 2015/northbound/PM, etc. (See Table 2-6.3 for the Total Freeway Delay of each alternative scenario). Four of the scenarios predict that the HOV 2+ alternative will result in the least Total Freeway Delay. The Mixed Flow alternative will result in the least freeway delay in two scenarios. The No Build alternative will experience the least delay in the Southbound/AM/2015, 2020 scenarios.

The traffic study predicts 4-7% more trips on the freeway with the build alternatives. As a result, improved traffic for local arterials would be expected. This is a result of motorists attempting to take advantage of the added freeway capacity by traveling on the freeway rather than local arterials. However, it is likely that the forecasts assigned too much traffic to the freeway because motorists would be likely to return to arterials to seek a less congested route.

In addition, a second study, known as FREQ 11, was conducted to predict the Total Expected Freeway Travel Times. This study was done to better account for traffic queue areas outside the original study limits, Route 116 to River Road. (See Section 2-6.5, Tables 2-6.4 and 2-6.5) This study looked at the year 2020 traffic in the northbound and southbound directions for both AM and PM peak hour periods. The HOV 2+ alternative had the shortest travel time for 3 scenarios but the longest travel time for the Northbound/AM commute.

The proposed project would increase traffic carrying capacity. As a result, a reduction in traffic volumes on local arterials is expected. The FREFLO study predicted a greater Southbound/AM delay with the project. However, the FREQ 11 analysis, which took into account traffic queue areas outside the original study limits, predicts that the project will result in reduced Southbound/AM travel time due to the project. Although, the FREQ 11 analysis does predict increased Northbound/AM travel times with the project, this is outweighed by the benefit during the Southbound AM/PM and Northbound PM commutes. (See Table 2-6.4)

There are a number of exceptions to mandatory design standards requested for this project. Exceptions from standards are requested for various median horizontal clearance and shoulder widths, vertical clearances at various overcrossings, freeway exits, deceleration lanes, interchange spacing and widths of overcrossings. These exceptions are not anticipated to substantially increase roadway hazards. These exceptions from standards are requested for the following reasons:

- According to Caltrans statistics, a total of 39 accidents occurred within the ramp areas, with 21 of them occurring on the off-ramps. Currently, short deceleration length (DL) distances exist in these areas. To mitigate for the short DL distances, auxiliary lanes will be provided prior to the off-ramps at Todd Road and Hearn Avenue. At other ramps located within the project area, ramp accidents were minimal.
- Reconstruction of interchanges are not within the scope of this project and are proposed for future projects.

- Right of way procurement would be necessary to standardize off-ramps by realigning ramps and reconstructing interchanges; this would affect 11 residential properties and 13 businesses.

These reasons also apply to continuation of existing conditions, which therefore do not increase hazards.

The proposed project would not affect existing rail or air traffic patterns.

Emergency vehicle response time should improve with the increased capacity and improved traffic flow.

The project will not result in inadequate parking capacity.

The project is consistent with the 1998 RTP, it is one of the top ten projects endorsed by the Sonoma County Transportation Authority and its improvements are supported by the Transportation Element of the Santa Rosa General Plan and the Sonoma County General Plan.

5.XVI Utilities and Service Systems

The project will not exceed wastewater treatment requirements of the North Coast RWQCB. See 5.VIII.

This project will not require or result in the construction of a new water or wastewater treatment facility or the expansion of existing facilities, the construction of which could cause significant environmental effects.

This project will not require or result in the construction of a new storm water drainage facility or expansion of existing facilities, the construction of which could cause significant environmental effects. See 5.VIII.i-j.

No new water supplies will be needed to serve the project.

This project will not result in a determination by the wastewater treatment provider which serves the project. Caltrans District 4 has been issued NPDES permit CAS0025038 covering this portion of Route 101 proposed for construction.

See **Section 5.VII** for a discussion of Hazardous Waste disposition. Two embankment sites are included within the project to handle leaded materials. Legal disposal of any fill material/solid waste associated with construction of this project will be handled by the contractor in accordance with specifications outlined in the project Plans, Specifications and Estimates.

5.XVII Findings of Significance

The proposed project would not significantly impact the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. The incorporated mitigations protect against impacts that might degrade the quality of the environment. See **Section 10, Mitigation Measures** for more details.

Cumulative Impacts

Cumulative impacts are defined as environmental effects resulting from the incremental contribution of a project when added to the environmental effects of past, present and reasonably foreseeable future actions regardless of whether the lead agency proposes these actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. The purpose of this cumulative impacts section is to document that the consequences of the proposed project have been considered together with those of other projects.

This project does not have impacts or incremental effects that are considerable when viewed in connection with the effects of past projects, the effect of other current projects, and the effects of probable future projects.

In the preparation of this document, five other projects are considered for potential cumulative effects with the Sonoma 101 Wilfred to Route 12/101 Interchange Widening and Soundwall Project.

- Wilfred Interchange Improvement Project
- Route 12/101 to Steele Lane Widening and Soundwall Project
- Steele Lane Interchange Improvement Project
- Route 12 Median Barrier Replacement Project
- Route 12/Farmer's Lane Interchange Project

Table 5-.XVII.b summarizes the cumulative impacts of these projects together with the proposed Hwy 101/Wilfred to Route 12 Widening and Soundwall Construction project.

**Table 5-XVII.b
Cumulative Impacts**

Resources	Hwy 101/Wilfred to Route 12 Widening and Soundwall Construction	Wilfred Interchange Improvements	Route 12/101 to Steele Lane Widening & Soundwall Construction	Steele Lane Interchange Improvements	Route 12 Median Barrier Replacement Project	Route 12/Farmer's Lane Interchange Improvements	CUMULATIVE IMPACT
Geology	No increase in risk of injury or death to humans or damage to facilities.	No increase in risk of injury or death to humans or damage to facilities.	No increase in risk of injury or death to humans or damage to facilities.	No increase in risk of injury or death to humans or damage to facilities.	No increase in risk of injury or death to humans or damage to facilities.	No increase in risk of injury or death to humans or damage to facilities.	No Impact
Hydrology/ Water Quality	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Increase in paved area but less than significant increase in volume of storm water run off. Mitigation measures will be implemented to adhere to conditions of the Caltrans Statewide NPDES permit and SWPPP requirements.	Less than significant impacts with mitigation incorporated.
Air Quality	Expected to improve air quality through congestion relief	Expected to improve air quality through congestion relief	Expected to improve air quality through congestion relief	No impact	Expected to improve air quality through congestion relief	Expected to improve air quality through congestion relief	No Impact
Vegetation	Less than significant impacts on vegetation. Removal of 200 redwood trees and 87 oaks that will be replaced at a 3:1 ratio within the project limits and at a mitigation site respectively. Temporary loss of landscaped vegetation will be replanted upon completion of project.	Less than significant impacts on vegetation. Removal of some trees/ vegetation that will be replaced at ratio's consistent with the Wilfred to Route 12 widening and soundwall construction project.	Less than significant impacts on vegetation. Removal of some trees/ vegetation that will be replaced at ratio's consistent with the Wilfred to Route 12 widening and soundwall construction project.	Less than significant impacts on vegetation.	Less than significant impacts on vegetation.	Less than significant impacts on vegetation.	Less than significant impacts with mitigation incorporated
Fish and Wildlife	Potential impact to 2 species of concern. Mitigation measures taken to minimize impacts.	Potential impact to 2 species of concern. Mitigation measures taken to minimize impacts.	Less than significant impact to fish and wildlife.	Less than significant impact to fish and wildlife.	Less than significant impact to fish and wildlife.	Less than significant impact to fish and wildlife	Less than significant impacts with mitigation incorporated
Wetlands	Less than significant impact to wetlands. .17 hectares of wetlands will be replaced at a one-to-one ratio and .32 hectares will be temporarily impacted. Mitigation measures will be taken to minimize impacts.	Potential non-significant impact to wetlands. Impact will be mitigated at a ratio to be determined through consultation with the Army Corps of Engineers.	Potential non-significant impact to wetlands. Impact will be mitigated at a ratio to be determined through consultation with the Army Corps of Engineers.	Potential non-significant impact to wetlands. Impact will be mitigated at a ratio to be determined through consultation with the Army Corps of Engineers.	Potential non-significant impact to wetlands. Impact will be mitigated at a ratio to be determined through consultation with the Army Corps of Engineers.	Potential non-significant impact to wetlands. Impact will be mitigated at a ratio to be determined through consultation with the Army Corps of Engineers.	Less than significant impacts with mitigation incorporated

**Table 5-XVII.b
Cumulative Impacts**

Resources	Hwy 101/Wilfred to Route 12 Widening and Soundwall Construction	Wilfred Interchange Improvements	Route 12/101 to Steele Lane Widening & Sound wall Construction	Steele Lane Interchange Improvements	Route 12 Median Barrier Replacement Project	Route 12/Farmer's Lane Interchange Improvements	CUMULATIVE IMPACT
Land Use	No impacts on land use.	No impacts on land use.	No impacts on land use.	No impacts on land use.	No impacts on land use.	No impacts on land use.	No impact
Socio-economic / Growth Inducement	No socioeconomic or growth inducements.	No socioeconomic or growth inducements.	No socioeconomic or growth inducements.	No socioeconomic or growth inducements.	No socioeconomic or growth inducements.	No socioeconomic or growth inducements.	No impact
Community Facilities/ Services	The proposed project site will temporarily impact a public park during construction. Mitigation measures will minimize the impacts.	No community facility/services impacted	Less than significant impacts to facilities/services	No community facility/services impacted	No community facility/services impacted	No community facility/services impacted	Less than significant impact
Traffic / Transportation	Improves traffic operations and reduces congestion. Promotes use of carpooling.	Improves traffic operations	Improves traffic operations and reduces congestion. Promotes use of carpooling.	Improves traffic operations and reduces congestion. Promotes use of carpooling.	No impact.	Improves traffic operations.	No impact
Visual Resources	Construction of noise barriers and removal of some trees will have an effect on scenic environment. Mitigation measures (landscaping) will minimize impacts.	Removal of some trees will have minimal effect on scenic environment. Mitigation measure will be taken to minimize these impacts.	Construction of noise barriers and removal of some trees will have minimal effect on scenic environment. Mitigation measures will minimize impacts.	Less than significant impacts on scenic environment. Mitigation measures will be taken to minimize effects.	Installation of median barrier will have less than significant impacts on scenic environment. Mitigation measures will be taken to minimize effects.	Less than significant impacts on scenic environment. Mitigation measures will be taken to minimize effects.	Less than significant impact with mitigation incorporated
Noise	Noise levels at some locations will slightly exceed the noise abatement criteria. These increases will be abated through construction of noise barriers.	Noise levels at some locations will slightly exceed the noise abatement criteria. These increases will be abated through construction of noise barriers.	Noise levels at some locations will slightly exceed the noise abatement criteria. These increases will be abated through construction of noise barriers.	Noise levels at some locations will slightly exceed the noise abatement criteria. These increases will be abated through construction of noise barriers.	No impacts	Noise levels at some locations will slightly exceed the noise abatement criteria. These increases will be abated through construction of noise barriers.	Less than significant impact
Cultural Resources	No cultural resources will be affected.	No cultural resources will be affected.	Historic properties exist within project limits. Mitigation measures will be implemented to avoid/minimize impact.	No cultural resources will be affected.	No cultural resources will be affected.	No cultural resources will be affected.	Less than significant impact with mitigation incorporated

**Table 5-XVII.b
Cumulative Impacts**

Resources	Hwy 101/Wilfred to Route 12 Widening and Soundwall Construction	Wilfred Interchange Improvements	Route 12/101 to Steele Lane Widening & Sound wall Construction	Steele Lane Interchange Improvements	Route 12 Median Barrier Replacement Project	Route 12/Farmer's Lane Interchange Improvements	CUMULATIVE IMPACT
Hazardous Materials	<p>Aerially deposited lead is present in soil. Construction mitigation measures will be implemented to minimize impacts.</p> <p>Although site reconnaissance and regulatory file reviews did not indicate the presence of Underground Storage Tanks (UST's) within the existing or proposed Caltrans ROW, undocumented UST's, if encountered, UST's and associated piping will be removed in accordance with the requirements of the Sonoma County Environmental Health Department (SCEHD).</p>	Potential for presence of aerially deposited lead in soil. Construction mitigation measures will be implemented to minimize impacts.	Potential for presence of aerially deposited lead in soil. Construction mitigation measures will be implemented to minimize impacts.	Potential for presence of aerially deposited lead in soil. Construction mitigation measures will be implemented to minimize impacts.	Potential for presence of aerially deposited lead in soil. Construction mitigation measures will be implemented to minimize impacts.	Potential for presence of aerially deposited lead in soil. Construction mitigation measures will be implemented to minimize impacts.	Less than significant impact with mitigation incorporated

Incremental Contribution

CEQA states that "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem."

It should be noted here that according to CEQA guidelines, the mere existence of significant cumulative impacts caused by **other projects** alone should not constitute substantial evidence that proposed projects are considerably or significantly cumulative.

Compliance with a previously adopted environmental document

This project is in compliance with a previously approved plan or program by virtue of its conformity with requirements in the 1998 adopted RTP EIR. The 1998 RTP EIR analyzes the potential environmental effects of the adoption of the 1998 RTP and satisfies the requirements of CEQA. The EIR lists the range of potential impacts of the RTP and recommends a set of measures to mitigate significant adverse regional impacts and analyzes several alternatives to the RTP. Where the RTP analysis covers activities also included in the proposed project, the proposed project has adopted the environmental features suggested in the RTP EIR, ensuring that cumulative impacts remain at a less than considerable level. Additional measures used regionally by MTC to lessen cumulative impacts include:

- Regionally advocating for higher/expanded transportation planning and funding on federal and state levels.
- Exploring the creation of a regional gasoline tax proposal for the November 2000 ballot.
- Requiring all corridor projects are to comply with CEQA and NEPA requirements before approval by MTC.
- Advocates for carefully planned growth within the region, although the planning for new residential and employment land use falls outside of the purview of MTC.

Logical Termini

The Wilfred Avenue interchange and the Route 12 Interchange are logical termini for a widening project within the corridor. Caltrans highway operations analysis indicates that the segment between these two interchanges is the most congested in the Sonoma County corridor. Regardless of whether other projects are built within the corridor, this project will improve traffic flows on this section of Sonoma 101, especially during peak periods.

The Sonoma County Transportation Authority (SCTA) has identified this segment as the number one priority for the county's transportation improvement projects to be included in the STIP. The RTP also includes this project, among others in the Sonoma-Marín 101 Corridor. Sonoma County's CMA, the SCTA, used the RTP to prioritize this project and program it into the STIP. This project is included in the STIP as a standalone project; was studied as such in the Initial Study/Environmental Assessment, and is subject to project approval as such by the California Transportation Commission (CTC).

Independent Utility of the Project

This segment of Route 101 between the Wilfred Avenue Interchange and the Route 12 interchange is the primary connector between the cities of Rohnert Park and Santa Rosa. As such, it has independent utility within the corridor and is projected to reduce existing traffic congestion, and future congestion in the project area.

5.XVII.c - This project will not have environmental effects that will cause substantial adverse effects on human beings whether directly or indirectly.

See **Section 4.2** for an additional discussion of NEPA cumulative effects.